AMS 151 - Applied Calculus 1

Fall 2024; 3:30 PM - 4:50 PM; Tue & Thu

Instructor Information

Instructor Hyunwook Koh, Ph.D. Email hyunwook.koh@stonybrook.edu Office Location & Hours B521; 1:00 PM - 5:00 PM, Fri (or by appointment)

Course Information

Course Description

The world around us is continually changing - populations increase, a cup of coffee cools, a stone falls, chemicals react with one another, currency values fluctuate, and so on. We would like to be able to analyze quantities or processes that are undergoing continuous change. For example, if a stone falls 10 feet each second we could easily tell how fast it is falling at any time, but this is not what happens – the stone falls faster and faster, its speed changing at each instant. In studying calculus, we will learn how to model (or describe) such instantaneously changing processes and how to find the cumulative effect of these changes. Calculus builds on what you have learned in algebra and analytic geometry but advances these ideas spectacularly. Its uses extend to nearly every field of human activity.

Calculus is less static and more dynamic. It is concerned with change and motion; it deals with quantities that approach other quantities. This course covers the topics of (1) functions and models, (2) limits and derivatives, (3) differentiation rules, (4) applications of differentiations and (5) integrals.

Teaching Assistant

Eunjae Kim; Email: eunjae.kim@stonybrook.edu; Office: TBA; Office hours: TBA Hyena Kim; Email: hyena.kim@stonybrook.edu; Office: TBA; Office hours: TBA

Pre-Requisites

 \geq B in MAT 123 (Pre-calculus) or \geq Level 5 on the math placement exam

Teaching Mode

All classes will be held in-person (C506).

Textbook

"Calculus: Early Transcendentals" by James Stewart, Daniel Clegg, Saleem Watson, 9th edition, Cengage, 2021; International edition

Course Materials

All the course materials (e.g., lecture notes, assignments) can be found on Brightspace.

Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

School Policy on Attendance

- 1. All students are required to attend every class.
- 2. If a student has over 20% unexcused absences, the student's final course grade will be an F.
- 3. Students should report the reason of absence to the professor in advance, or immediately after the absence.
- 4. When a student excuses his/her absence, the student must provide documentation of the reason for the absence to the professor.
- 5. The professor of the course reserves the right to excuse absences.
- 6. The professor may excuse the absence if the submitted documentation fulfills the following conditions: extreme emergences, severe medical reasons with doctor's note, very important events.

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Course Evaluations

Stony Brook University values student feedback in maintaining the high-quality education it provides and is committed to the course evaluation process, which includes a mid-semester assessment as well as an end-of-the-semester assessment, giving students a chance to provide information and feedback to an instructor which allows for development and improvement of courses. Please click the following link to access the course evaluation system: http://stonybrook.campuslabs.com/courseeval/

Grading

Final grade = *f*(Attendance [10%] + Homework [10%] + Midterm 1 [25%] + Midterm 2 [25%] + Final [30%]); ABCDF grading; 3 credits

Total score	Final grade
94 - 100	A
90 - 93	A-
87 - 89	B+
84 - 86	В
81 - 83	В-

78 - 80	C+
75 - 77	с
72 - 74	C-
<u>69 - 71</u>	D+
<u>66 - 68</u>	D
<u>61 - 65</u>	D-
≤ 60	F

Tentative Course Schedule

No.	Date	Торіс	Homework
1	Aug 27	Syllabus & A Preview of Calculus	
2	Aug 29	Functions and Models	ТВА
3	Sep 3	Functions and Models	ТВА
4	Sep 5	Functions and Models	ТВА
5	Sep 10	Functions and Models	ТВА
6	Sep 12	Limits and Derivatives	ТВА
7	Sep 17	No class (Chuseok)	
8	Sep 19	Limits and Derivatives	
9	Sep 24	Limits and Derivatives	ТВА
10	Sep 26	Limits and Derivatives	ТВА
11	Oct 1	Limits and Derivatives	ТВА
12	Oct 3	No class (Korea National Foundation Day)	ТВА
13	Oct 8	Midterm 1	
14	Oct 10	Differentiation Rules	
15	Oct 15	Differentiation Rules	ТВА
16	Oct 17	Differentiation Rules	ТВА
17	Oct 22	Differentiation Rules	ТВА
18	Oct 24	Differentiation Rules	ТВА
19	Oct 29	Applications of Differentiation	ТВА
20	Oct 31	Applications of Differentiation	ТВА
21	Nov 5	Applications of Differentiation	ТВА
22	Nov 7	Applications of Differentiation	ТВА
23	Nov 12	Applications of Differentiation	ТВА
24	Nov 14	Midterm 2	
25	Nov 19	Integrals	ТВА
26	Nov 21	Integrals	ТВА
27	Nov 26	Integrals	ТВА
28	Nov 28	Integrals	ТВА
29	Dec 3	Integrals	ТВА
30	Dec 5	Integrals	ТВА

No.	Date	Торіс	Homework
31	Dec 10	Final	

Tentative Exam Schedule

Date	Subject
Oct 8	Midterm 1
Nov 14	Midterm 2
Dec 10	Final
<u>(3:15 PM - 5:45 PM)</u>	